

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

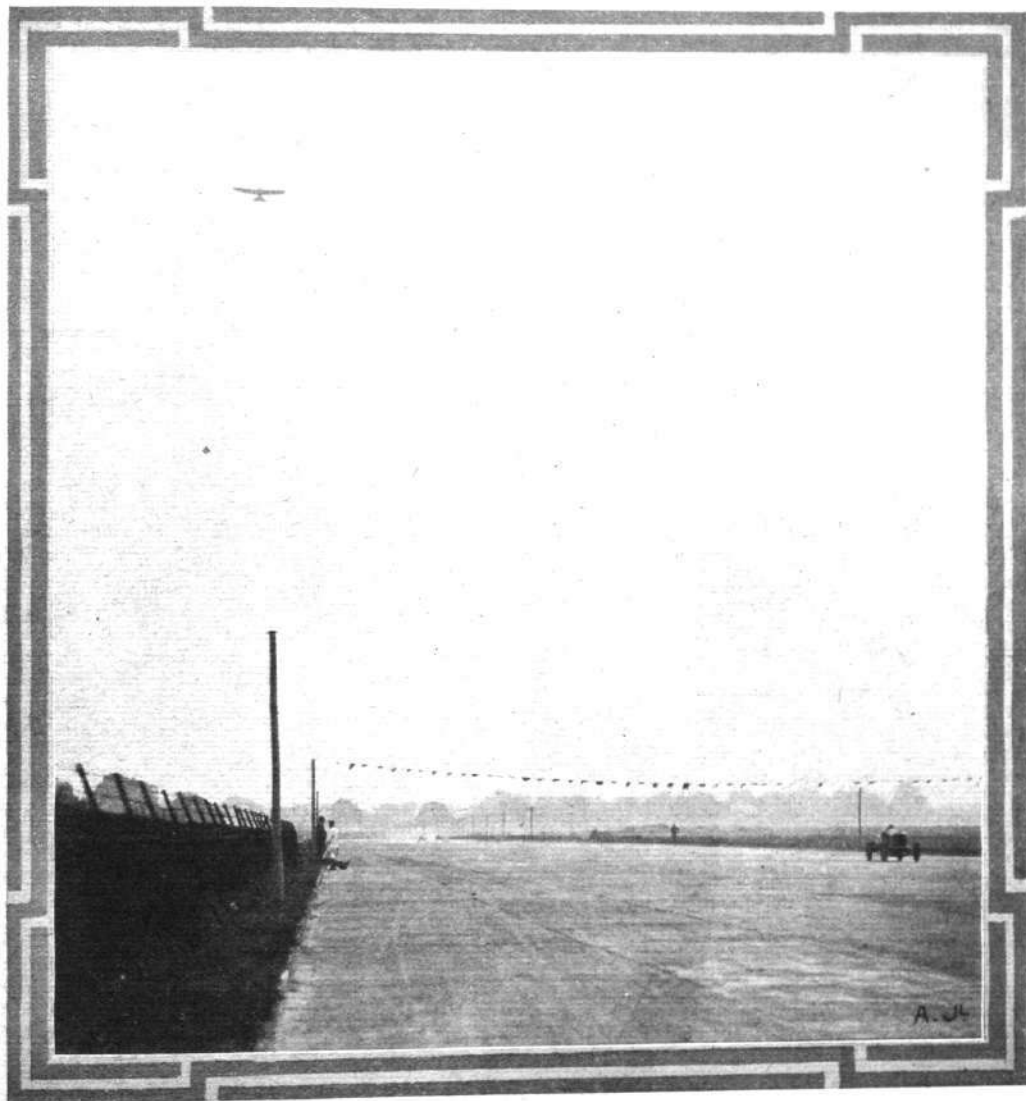
OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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"NECK AND NECK" DOWN BROOKLANDS STRAIGHT.—An incident at the Season-End Meeting during the finish of the 76-m.p.h. Handicap. Overhead is Mr. Graham-Gilmour racing on his Gnome-engined Biérolot.

THE INTERNATIONAL LAW OF THE AIR.

THE International Conference on Aerial Navigation, which first met in Paris in May last to draw up a Convention defining the international law of the air, now seems finally to have broken up without any very definite decisions having been arrived at. It will be remembered that the Conference adjourned at the end of June on the proposal of the British delegate, Rear-Admiral Gamble, who was instructed that his Government considered the high importance of the questions treated by the Conference to be such as to make it necessary for the Government to study carefully those questions before the draft Convention was approved. The adjournment was approved and the members of the Conference arranged to meet again on Tuesday of last week; but when that date arrived nothing further was done though it was announced that the assembling of the Conference had been postponed *sine die*. So far as information is forthcoming upon the cause of what is really a break-up of the Conference—for the time being, at any rate—it seems to have been caused by the attitude of certain Powers, including Great Britain, who desire to retain the right to close their frontiers against the aerial vessels of one or all nationalities when they see fit, without any obligation to give a reason for taking such action. Negotiations are now said to be in progress between the various Governments with a view to finding a way out of the *impasse* in which the Conference finds itself.

Whatever the ultimate result of these negotiations may be, we think it a cause for congratulation that the British Government appears fully to recognise the imperative importance of starting well in this matter of the codification of international aerial law. There may be no great importance attaching to the exact point which happens to have brought the Conference to an untimely end. It is rather the principle underlying the action leading up to continued postponement with which we are concerned. Too long has the Government appeared to look upon aerial navigation as something too far removed for serious notice, and to regard the aerial enthusiast as a person with "a bee in his bonnet." The measured words of Admiral Gamble's resolution, anent profound study on the part of the Government, indicates very clearly that the old-time policy of *laissez faire* in matters aerial is past and done with.

The Times, in its issue of November 29th, publishes a summary of the draft Convention as it stood when the Conference adjourned in June last, which has all the appearance of being at least a semi-official document. This draft Convention deals with the law of the air in its broader principles of international application, what we may term the more local principles being applied through the rules contained in the *Règlement de la Circulation Aérienne* which is apparently annexed to the Convention but of which, unfortunately, the full text is not available. The Convention appears to have been drafted almost entirely upon the provisions of international maritime law. There are the same requirements as to registration and nationality of air-vessels, certificates of fitness of the craft and the competence of its navigators and navigation in territorial waters—using the maritime phrase for the sake of convenience—and the same regulations applying to the sojourn of alien craft in distress. There are, of course, some inevitable differences between the terms of the Convention and the text of the maritime law which are

rendered necessary by the differences in navigational circumstances. For instance, it is laid down that aerial navigators must keep a very detailed log, giving the names, nationality and domicile of all persons on board, and embodying a record of the course, altitude and all the events of the voyage. This log must be preserved for at least two years from the date of the last entry, and must be produced on the demand of the authorities. Each State would have to exercise the right of police and Customs supervision in the atmosphere over its territory. It would have power to regulate passenger and goods traffic between points in its own territories, and it could prohibit navigation in certain zones of reasonable extent. These zones would have to be indicated with sufficient precision to permit of them being shown on aeronautical charts of the scale of 1-500,000 at least.

Dealing with the question of aerial vessels coming to land in foreign territories, the Conference agreed that they should be exempt from duty and that provisions and working materials should enjoy the customary tolerance, while passengers' luggage should be treated as though it had arrived by way of a land or sea frontier. The carriage of merchandise can only be undertaken by virtue of special conventions or in virtue of internal legislation. A noteworthy point is that the aerial transport of explosives, firearms, ammunition and carrier birds is prohibited; and that of photographic apparatus is to be regulated by each State within its own territory. A State may cause the photographic negatives found on board an airship coming to earth in its territory to be developed, and if necessary may seize them and the photographic apparatus. Wireless telegraphic apparatus, too, carried by an airship may not be used, without special permission, for any other purpose than to secure the vessel's safety.

These regulations, of course, apply only to privately owned vessels. The regulation of public and military airships is provided for in a separate section of the Convention. While vessels of this character are exempt from many of the general regulations, they are naturally enough bound down by special conditions of their own. The departing or landing of military airships of one State in the territory of another is prohibited, unless with the authorisation of the State whose territory is involved; while each contracting State is at liberty to prohibit or regulate in accordance with its interests the passage over its territories of military airships belonging to other contracting States. A clause in the Convention relating to the extra-territoriality of military airships and their crews while within the limits of jurisdiction of a foreign State, appears not to have met with the full approval of the delegates of several Powers, Great Britain and Austria being among those who reserved their adhesion. Finally, the Convention stipulates that nothing it contains shall interfere with the liberty of action of belligerents or with the rights and duties of neutrals.

The above are the principal points of this most interesting draft Convention—which, however, is not really a Convention since it has not received the formal approval of the interested Powers. And, in the light of the indefinite adjournment of the Conference, it is perhaps doubtful if it stands much chance of being embodied in the Law of Nations just yet. However that may be, it has the supreme interest of being the first document dealing with the law of the air as between the nations.

FLIGHT PIONEERS.

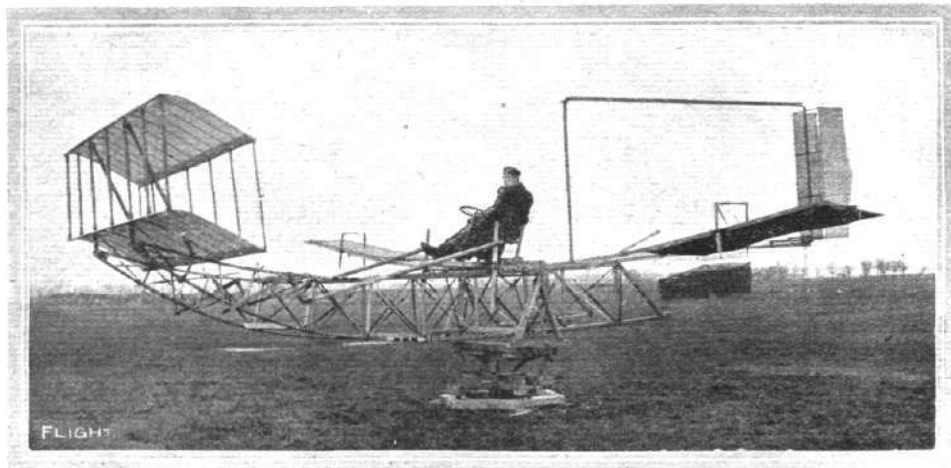


MR. G. C. COLMORE.

THE SANDERS "TEACHER."

THOSE wishing to take up aviation either as a recreation or a profession find many drawbacks at the commencement of their undertaking, but one of the most formidable, especially to those not

simultaneously learning the control of the machine he wishes to pilot, and the principle is applicable to any make or type of aeroplane. In the second place the balance of the teacher is so arranged



The Sanders Teacher in use.

blessed with a long purse, is the risk of smashing the machine while endeavouring to learn how to control and fly it.

Even the most apt pupil is certain to find himself in difficulties at some time or another during his probation, and owing to lack of skill the machine is necessarily sacrificed to save his life, or at least to prevent a serious accident. The invention, therefore, of a device which will enable the novice to obtain a clear conception of the workings of the control of an aeroplane, and of the conditions existent in the air, without any risk personally or otherwise, is to be

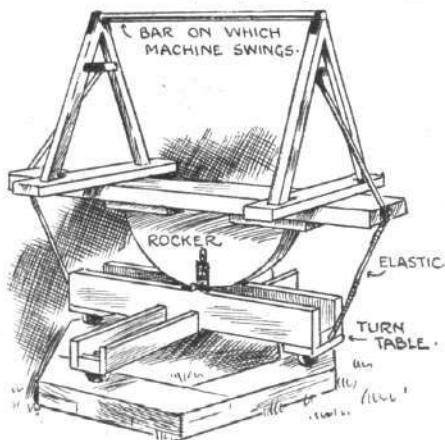
on scientific principles that the conditions are practically the same as if the pupil were actually in the air. The varying force of the wind has effect in almost an identical manner as on a working aeroplane, while the niceties of lateral and longitudinal stability are not carried to an extreme.

The device, as will be realised from the description following, is neither costly nor elaborate, while the perfection of workmanship to be found in the Sanders biplane is also plainly noticeable here. One would say that the motto of the firm is "If a thing is worth doing at all it is worth doing well," as even the minutest detail is carried out with most scrupulous care and accuracy and only incorporated in the construction after much thought and experiment.

The machine consists of a fuselage-elevator, two lateral ailerons and a rudder either single or double planed. The control is a simple motor steering wheel in front of the pupil connected up with elevator, rudder and ailerons. All these details are standard parts of the Sanders biplane and can be substituted if desired by the same parts of any other type of aeroplane. Thus, the purchaser of a Teacher is buying parts which can be used later if he wishes in the construction of a machine and his outlay can therefore scarcely be considered an extravagant one. The fuselage is slung on to a wooden pivot consisting of a hexagonal bottom on which a cross-way square running on wheels is placed. Above this is a rocker bearing a flat board surmounted by two triangular brackets with a bar running through sockets at the top. This bar also passes through two corresponding sockets on the upper part of the fuselage which is thus slung on the pivot. A bolt runs vertically through the centre of the pivot, beneath the rocker, on which the entire machine can swing round to the wind, the movement being very free owing to the ball bearings on the crossway piece below. The ailerons attached at either end of two 12 ft. spars are braced up by means of wire stays to the fuselage and a mast is situated at the rear of the machine. They are also supported above by a rubber spring attached to two small masts.

For the rest, a personal inspection is recommended to aviation instructors as a device worthy of their attention.

DOROTHY M. HAWARD.



THE SANDERS TEACHER.—The Pivoted Rocker.

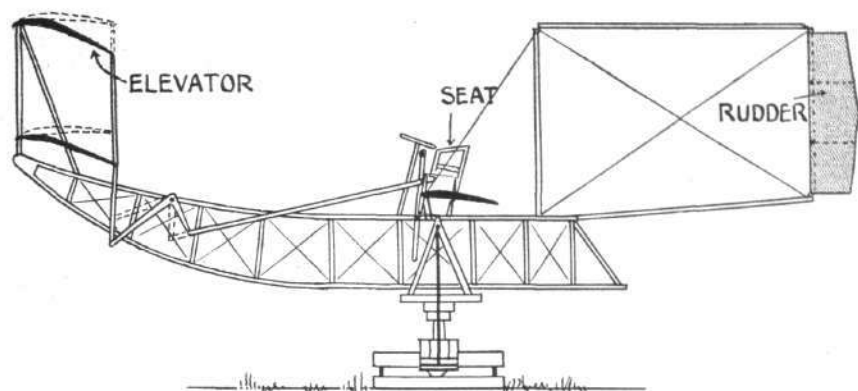
welcomed without a doubt. Several have already been constructed to this end, and the Sanders Teacher is the latest to enter the field.

The aim and object of an invention of this kind is naturally to render tuition safe to the pupil while at the same time giving him confidence. Now there is a tendency to design such an apparatus merely for purposes of balance and without any real resemblance to an actual aeroplane, while the very balance is so exaggerated that the pupil is placed under conditions that are in no way so arduous in free flight.

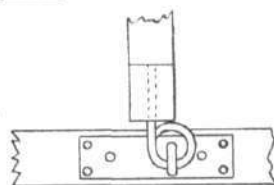
The Sanders Teacher seeks to overcome both these difficulties. In the first place the teacher so closely adheres to the construction of the actual aeroplane that the pupil in learning to control it is

Artillery for Fighting Airships.

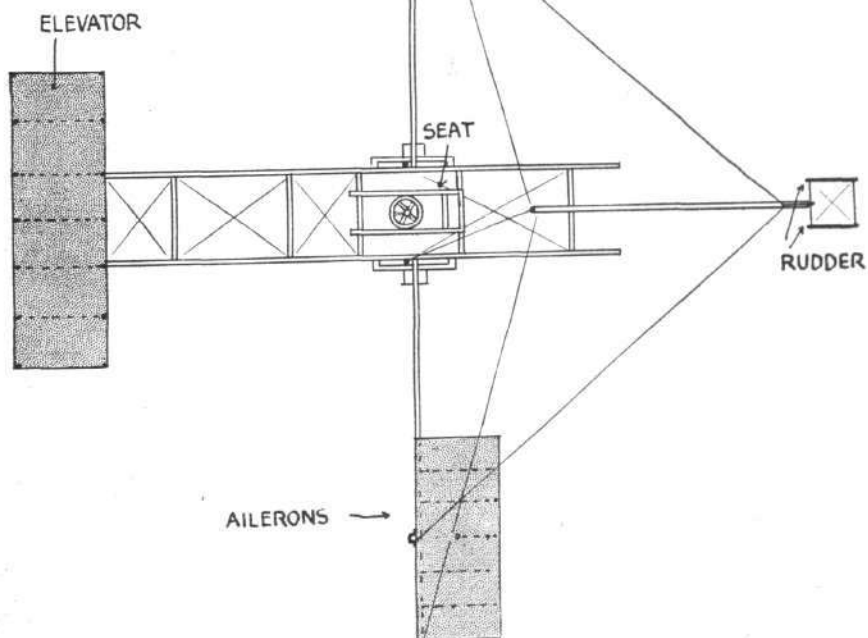
Two new weapons for offensive use against airships and aeroplanes have just been completed at the Krupp Works, Essen, and are now undergoing their tests. One of the guns is mounted on a completely armoured motor car, while the other, of a lighter type, is so arranged on the platform of a trailer, that it can be either used in that position or direct on the ground, it being provided with a carriage of the field artillery type, and the lorry fitted with runners for lowering the guns to the ground.



METHOD OF MAKING
JOINT ON SKIDS



METHOD OF FIXING SPARS
FOR SUPPORTINGAILERONS



THE SANDERS TEACHER.—Plan, Elevation and details.

AEROPLANE SILHOUETTES FROM THE PARIS SHOW.

THE VOISIN BIPLANE.

CONSTRUCTED in France by Voisin Frères (Charles and Gabriel Voisin). The first European biplane of real success. Elevator incorporated in tail. No forward elevator. Framework of steel tube. Fabric is Continental aeroplane material. A type with conventional wooden framework is still constructed. Holder of the world's biplane speed record made by Bunau-Varilla at Rheims (1910).

General Dimensions.—Length overall (steel type), 10.50 metres; (wooden type) 10.40 metres; width (steel type), 11 metres; (wooden type) 10 metres. Width of main planes (both types), 2 metres.

Seating capacity.—(Steel type) two seats placed side by side and with dual control; (wooden type) single seater, seats placed in front of main planes in both types.

Engine.—60-h.p. 8-cyl. V-type water-cooled E.N.V., or 50-h.p. 7-cyl. rotary air-cooled Gnome, or according to choice.

Propeller.—Voisin two-bladed, of steel; variable pitch. Situated behind main planes.

Chassis.—Two wheels; no skids; small wheel placed forward about three feet from the ground to take initial shock of bad landing.

Tail.—Monoplane tail with elevator hinged to trailing edge. Single rudder placed centrally below tail plane.

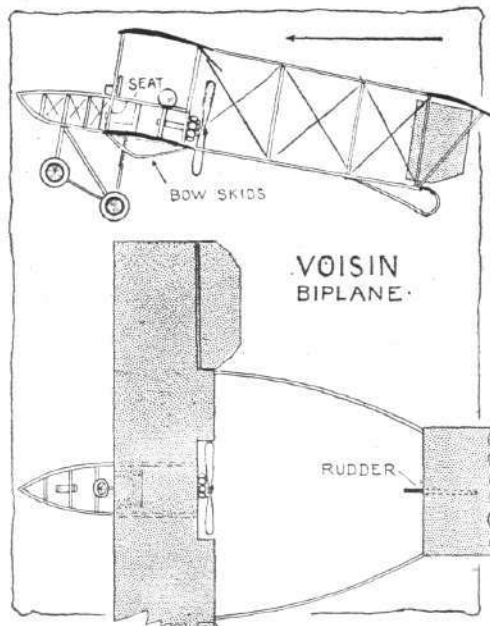
Lateral stability.—By large ailerons fitted to the trailing edge of the upper main plane.

Weight.—Complete with motor (60-h.p. E.N.V.), 370 kilograms.

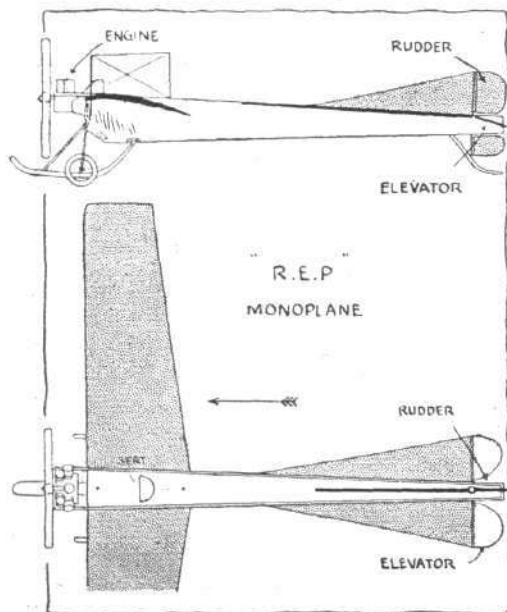
Speed.—80 to 90 kiloms. an hour.

System of control.—By a wheel at the end of a horizontal shaft and moving in a sleeve; pulling the wheel elevates the machine, pushing depresses the elevator; rotating the wheel in either direction steers the aeroplane as an automobile. Two pedals in front of the pilot actuate the ailerons for the maintenance of lateral stability, the right pedal depressing the left aileron and *vice versa*.

Price.—(Steel type) with 60-h.p. E.N.V., 25,500 francs; with 50-h.p. Gnome, 28,000 francs; without engine or propeller, 14,000 francs. (Wooden type) with 60-h.p. E.N.V., 23,500 francs; with 50-h.p. Gnome, 26,000; and with 55-h.p. Antoinette, 25,000 francs.



THE R.E.P. MONOPLANE.



A FRENCH-BUILT monoplane. Framework of steel tubes covered with Continental aeroplane fabric, coloured red. Planes double-surfaced throughout. M. Robert Esnault-Pelterie, the designer and constructor of both the aeroplane and the engine bearing his initials, though yet but a little over thirty, was one of the earliest successful pioneers of mechanical flight.

General dimensions.—Length overall, 9.500 metres; width, 12.800 metres; height, 3 metres; length of each wing, 6.300 metres; breadth of each wing at widest point, 2.500 metres; total bearing surface, 25 square metres.

Seating capacity.—One or two seats.

Engine.—50-60-h.p. 5-cyl. semi-radial R.E.P. Normal revolutions, 1,000.

Propeller.—Normale. Two-bladed in wood, 2.60 metres diameter.

Wheels and skids.—Two wheels with single central hollow wooden skid. Whole chassis carefully sprung.

Tail.—Non-lifting tail plane with elevator hinged to trailing edge, divided to admit of the rudder working in the centre. The rudder is similarly divided to allow for the working of the elevator.

Lateral stability. By flexing the trailing edges of the main planes.

Weight.—With 50-60-h.p. R.E.P. motor, 480 kilograms.

Speed.—90 kiloms. an hour.

System of control.—By means of two levers situated on opposite sides of the pilot. The left-hand lever when moved backwards elevates the machine, and *vice versa*. A sideways movement to the left depresses the right wing, and to the right the left wing. The right-hand lever, if moved to the right, steers the machine in that direction, and the opposite movement steers to the left.

Price.—With 50-60-h.p. R.E.P. engine, 29,000 francs. No other engine is fitted, and the aeroplane is not supplied without a motor.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 6th inst., when there were present:—Mr. R. W. Wallace, K.C. (in the Chair), Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Mr. Cecil S. Grace, Col. H. C. L. Holden, R.A., F.R.S., Prof. A. K. Huntington, Mr. F. K. McClean, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, Mr. Stanley Spooner, and Harold E. Perrin, Secretary.

New Members.—The following new members were elected:—Maurice Ducrocq. J. D. Sturrock. Capt. H. F. Wood. **Aviator's Certificate.**—The following Aviator's Certificate was granted:—

38. C. C. Paterson.

New York Aviation Meeting.—The following clubs have joined with the Royal Aero Club in applying to the Fédération Aéronautique Internationale for an Extraordinary Conference to consider the protest of Mr. C. Grahame-White against the award made by the Aero Club of America in connection with the Statue of Liberty Prize:—

Aero Club of France.
Aero Club of Spain.

Aero Club of Austria.
Aero Club of Holland.

Baron de Forest £4,000 Prize.

The Committee of the Royal Aero Club has decided that, provided the competitor has duly given 48 hours' notice of the first attempt and has made proper arrangements with the official observer to be present at the start, such competitor will be deemed to have duly complied with the latter part of Rule 9 as regards giving 24 hours' notice of subsequent attempts.

SPECIAL REGULATIONS.

a. Competitors must have their machines ready for examination as soon as possible after sending in their entries. In the event of any alteration being made after the examination such alteration must be at once notified to the Secretary.

b. Competitors must, before starting, produce a certificate from the maker certifying that both machine and motor are of British manufacture in accordance with the rules.

c. The complete machine must be examined before the start and the competitor must give a written undertaking that such machine complies with the regulations.

d. Competitors will be required to pay the out-of-pocket expenses of officials in connection with the verification of the machine and the observing of the start. A deposit of £10 must be paid prior to the verification of the machine, and any balance after payment of the expenses will be refunded the competitor.

Competitors at Eastchurch, Dover and Shorncliffe.—There is great activity at Dover, where Mr. Robert Loraine, Mr. C. Grahame-White and Mr. C. H. Greswell are all waiting for a favourable opportunity to make an attempt for the prize. Lieutenant

Watkins is stationed at Shorncliffe and Mr. T. Sopwith and Mr. Cecil Grace are intending to make their start from the Club's Flying Grounds at Eastchurch. Mr. S. F. Cody is proposing to make his start from Farnborough.

The Club's Offer to the Admiralty.

A letter has been received from the Admiralty thanking the Club for its generous offer of two aeroplanes to be placed at the disposal of the Naval Officers at Sheerness and Chatham. The offer was made known officially on Tuesday last in a general order issued by Admiral Sir. C. C. Drury, Commander-in-Chief at the North.

The machines will be biplanes of the most modern type, driven by Gnome motors. They will be available at all times. No charge will be made, but Naval Officers piloting the machines will be asked to make good any damage done. Several members of the Club who are certified aviators have kindly offered to instruct the Officers.

"Daily Mail" £10,000 Prize.

A Special Committee of the Royal Aero Club is now engaged in drawing up the rules to govern this prize. These regulations will be published in full at an early date.

Rolls Memorial Fund.

Members who have not yet sent in their contributions to the above Fund are requested to do so as early as possible. By limiting individual subscriptions to the sum of 10s. the Committee hope they will receive the support of all members.

Contributions of books to the "Rolls Memorial Library" will also be greatly appreciated.

A list of subscriptions received to November 23rd was published on November 26th, and the following have since contributed up to the 7th inst.:—H. A. Arkwright, Capt. Hon. Claud Brabazon, J. P. Clark, G. R. S. Darroch, P. Harrington Edwards, Capt. B. G. Van de Weyer, and Miss May Wesley Hall.

Annual Dinner.

With reference to the announcement last week that the annual dinner would be held early in January, it has been found more convenient to postpone the dinner to a later part of that month. The exact date will be announced shortly. It is proposed to utilise the occasion for the presentation of the Baron de Forest £4,000 Prize, if won, and also of the British Empire Michelin Trophy with its cash prize of £500.

Temporary Honorary Membership.

Mr. Clifford B. Harmon, a member of the Aero Club of America, was unanimously elected an Honorary Member of this Club during his stay in this country.

Library.

Miss M. Balfour-Browne has kindly presented to the Rolls Memorial Library "Animal Locomotion," by Dr. J. Bell Pettigrew.

HAROLD E. PERRIN,
Secretary.

166, Piccadilly.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

Conisborough and District Model Ae. Soc. (18, Church St.).

A GENERAL meeting was held on the 1st inst., when several details with regard to the proposed glider were settled. It will be of the Farman type of 24 ft. span, the main planes being 5 ft. wide and set 5 ft. apart. It will be covered with calico and mounted on wheels which have been offered by Mr. H. Cowles. The meeting was adjourned for a week to enable other details to be worked out. On Thursday last the members inspected some premises which it is suggested should prove suitable for a workshop.

Coventry Aeroplane Building Society (22, Kingston Road).

A GENERAL meeting of the Society, which it is proposed to start under the above name, will be held in the Mayor's Parlour Restaurant, Broadgate, on Thursday next, the 15th, at 8 o'clock. All those who are interested are cordially invited to attend and to bring their friends. A moderate number of enthusiastic members have already come forward, but more are still required. Full particulars can be had from the secretary at the above address.

East London Aero Club (37, Tunmarsh Lane, Plaistow, E.).

The general meeting of the club has been arranged to be held in the Windsor Room, Alexandra Hotel, High Street, Stratford, E., to-night, Saturday, December 10th, at 7.30 precisely. After the official business has been discussed, and new members enrolled, a lecture will be given entitled "The Construction of Model Aeroplanes." The committee trust that any gentlemen who are thinking of becoming members, as well as anyone interested, will attend, and ladies are specially invited.

East London College Ae. Research Soc. (Mile End Road, E.).

Two very interesting lectures were given at the East London Technical College last week under the auspices of the above Society. The first on Monday was given by Mr. A. P. Thurston, the subject being "The Cody Machine." Mr. S. F. Cody was in the chair, and the audience demonstrated their appreciation of the good work he had done for aviation in this country. On Thursday evening the lecturer was Mr. J. A. Cousins, who dealt with the subject of

"Aerial Guns." There was again a good attendance, and the chairman was Prof. Smith. The two lectures arranged for next week are "Maxim's Recent Work on Aviation," by Mr. A. P. Thurston, on Monday evening, and "Aerial Photography," by Mr. A. G. Field, on Thursday evening.

Kite and Model Aeroplane Assoc. (27, VICTORY RD., WIMBLEDON)

ON Monday, November 28th, Mr. A. P. Thurston, B.Sc., gave an interesting and instructive lecture to the members on "The Stability of Model Aeroplanes and Gliders," illustrated by a series of lantern slides and also by a practical demonstration of gliders. Mr. G. P. Bragg Smith took the chair. A discussion was opened by Mr. T. W. K. Clarke, A.M.I.C.E., and carried on by Messrs. C. R. Fairey, W. Burge Webb, W. Sayers, W. Rowland Ding, F. Pringuer, and others. A hearty vote of thanks was accorded to Mr. Thurston and the chairman.

The president and council hope that all interested in kites and models will attend the next meeting on Monday, December 12th, when Maj. B. Baden-Powell, F.R.A.S., will lecture on "The Theory and Practice of Kites." The paper will be illustrated by lantern slides. The meeting will be held at 53, Victoria Street, S.W., by courtesy of the Aeronautical Society.

Scottish Aeronautical Society (185, HOPE STREET, GLASGOW).

THE first of an interesting series of lectures under the auspices of the Scottish Aeronautical Society was given in the Mechanical

Engineers' and Shipbuilders' Institution, Glasgow, yesterday, Friday, evening, by Mr. F. Norman, who selected as his subject "The Building of an Aeroplane." The chair was taken by Mr. Hugh Reid, D.L., J.P., and the lecture was illustrated by limelight views and models. The next of the series will be on December 21st, when Col. John A. Sillars will lecture on "Aeroplanes Up to Date," with special reference to their use in military operations.

Yorkshire Aero Club (HOTEL METROPOLE, LEEDS).

THE first annual general meeting was held on the 29th ult. at headquarters. Mr. Herbert Dunn was in the chair, and addressed a large and enthusiastic gathering of members on the past work and prospects of the club. The balance sheet and report was read and passed after an interesting discussion. The result of the postal ballot for the new committee was announced as follows: Messrs. H. Knowles, N. Hirst, E. E. Faiers, Dr. Vaughan Bateson, S. W. Fitzgerald, R. J. Isaacson, R. G. Macpherson, J. Martin, J. F. Riley, F. A. Hirst, H. Walker, and H. J. Potts. Mr. Herbert E. Harwood was re-elected hon. secretary, and Mr. N. de Lacy Evans hon. treasurer.

A vote of thanks to the chairman, officers, and committee for their efforts of the past year terminated an interesting and business-like evening.

Model Section.—The Saturday afternoon meetings at the Carlton Hill Drill Hall are being well attended, and some splendid flying is witnessed.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Flying Ground, Eastchurch.

WORK has been almost at a standstill this week owing to the execrable weather, Sunday (the 4th) being the only day when flying was possible. About 12.30 Mr. McClean and Mr. Grace brought out their "Short" biplanes, and rising well in a stiff breeze, flew in circuits for some time. After about 20 mins. Mr. Grace made a detour over Eastchurch village, but whilst passing over the latter, engine troubles developed. Mr. Grace immediately headed for "home," but had not proceeded far before he decided to land, which he accomplished quite safely with a good *vol plane* from about 1,500 ft.

The weather was again boisterous on Monday and Tuesday, so no further flights were possible.

Mr. T. Sopwith has arrived here with his Howard Wright biplane and a staff of mechanics are busy preparing the machine for his contemplated attempt to "lift" the Baron de Forest prize.

Brooklands Aerodrome.

ON Saturday, the 26th ult., after lunch, Capt. H. F. Wood, on the "Bristol" biplane, flew his test flights for his certificate. He travelled very steadily, and landed with a *vol plane* in good style. Capt. Wood is to be congratulated on obtaining his certificate so quickly, as the number of flights he has made are very few, and he shows great promise of making a brilliant flyer. Capt. Wood was the third pupil passed in the week by the "Bristol" school.

Last week proved nearly a blank; only two days, Friday and Sunday, were possible for flying. The River Wey is over its banks, and Brooklands looks dreary and desolate.

On Friday afternoon M. Ducrocq, M. Blondeau's pupil, tried his new racing-type Farman for the first time. Mr. Maché, who has restored his Gnome engine to his biplane, made a circuit, but found

the wind very puffy. Later on the Star monoplane, fitted with a 40-h.p. Star engine, made its *début* at Brooklands, piloted by Mr. Bradshaw, who made short straight flights. This machine is built somewhat on Antoinette lines, with a Farman type chassis. The engine seemed to be running well.

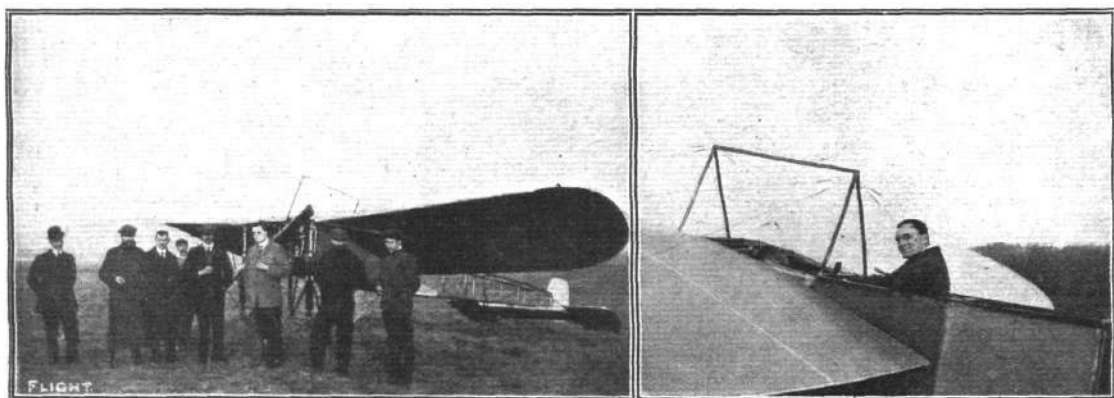
On Sunday, M. Ducrocq brought out his new Farman in the morning, and, flying at an altitude of about 800 ft., he visited Chertsey and neighbourhood, returning to the aerodrome. Mr. Pixton, on the Avroplane, owing to the engine failing, once more found the attraction of the sewage farm too much for him, but he landed lightly and escaped with only a broken skid.

Mr. England, a newcomer, on Mr. Thomas' Hanriot, was out rolling for the first time, and progressed sufficiently to take the next step in aviation—short straight flights.

The Otazell, piloted by Mr. Collyer, was also rolling, and Mr. Morrison, on his Gnome-Bleriot, made a circuit.

London Aerodrome.

DURING the past week wind and rain have made the weather conditions practically impossible for flying, and as a result there is no work in the air to be recorded. As soon as the weather permits two new Valkyrie machines will be tested, while there are quite a number of pupils waiting on the weather. The construction of a small Valkyrie machine, which will be fitted with a 30-35-h.p. Green engine, is well in hand, and it is hoped that it will be ready to take the air at the end of next week. It is probable that as soon as a suitable opportunity presents itself in the shape of a calm day a Valkyrie machine will be seen attacking the British duration record and incidentally trying to capture the British Michelin Cup. The Papin motorplane is now ready for going out, and several other machines are expected on the ground shortly.



AT THE BLÉRIOT SCHOOL, HENDON (LONDON AERODROME).—From left to right: Mr. P. Prier (instructor), Mr. E. A. Paul, Capt. Board, Mr. Bouwens, Mr. Pettipierre, Mr. Grabette. On the right: Mr. B. G. Bouwens, one of the pupils on the Blériot school machine.

BRITISH NOTES OF THE WEEK.

How "All-British" Prizes Benefit the Home Industries.

THERE is no doubt that "all-British" prizes, such as the De Forest prize, are having a great influence in the direction of encouraging the home industry. The Royal Aero Club has recently been giving its attention to the question as to what constitutes a British-built machine, and have come to the conclusion that all parts, such as castings, ball-races, drop-forgings, connecting-rods, &c., must be produced in the British Empire. In connection with these all-British prizes, the Club is taking every reasonable step to obtain information in advance as to the various parts of the competing machines being all-British, but at the same time it must be remembered by competitors that the onus rests entirely upon them, in the event of any protest, to see that nothing but all-British manufactured parts are embodied in their machines.

A Flying School for Yorkshire.

By a printer's error in a paragraph in our issue last week headed "An Aerodrome Wanted at Dewsbury," the name of Mr. A. Hunter was given incorrectly as Turner. Mr. Hunter, it will be remembered, has recently been at the Juvisy aerodrome, where he showed remarkable aptitude in learning to manipulate the Goupy biplane. After only a very short period of tuition Mr. Hunter made a very successful short flight, and he hopes to secure his pilot's certificate very shortly. Unfortunately urgent business necessitated his return from France before the necessary formalities were completed, but he proposes to go back shortly and obtain the certificate. Mr. Hunter has been so impressed by the qualities of the Goupy flyer that he has arranged to take up the sole agency for Great Britain. He also intends shortly to start a school of aviation at some suitable spot in the West Riding of Yorkshire.

Royal Aero Club Offer to the Navy.

In connection with the two aeroplanes placed at the disposal of Naval officers by the Royal Aero Club, a general order was issued on Monday by Admiral Sir C. C. Drury, Commander-in-Chief at the Nore. This points out that both the machines are biplanes of the most modern type, fitted with Gnome motors, and that they are placed at the disposal of naval officers at all times and without charge. The only conditions are that officers using them must become members of the Royal Aero Club and they must make good any damage done to the machines. Already several officers are in the field to take advantage of these facilities so patriotically offered by the Royal Aero Club and several club members who are certified pilots have offered to assist in instructing the officers.

Welcome Home to Mr. Claude Grahame-White.

A CONSIDERABLE gathering of friends assembled at Paddington on Monday afternoon to welcome home Mr. Claude Grahame-White, who had arrived on the "Mauretania" at Fishguard earlier in the day. By way of celebrating Mr. Grahame-White's fine victory for Great Britain in the International Competition for the Gordon-Bennett Trophy he was entertained on Wednesday evening at a banquet given at the Carlton Hotel by the Royal Aero Club of

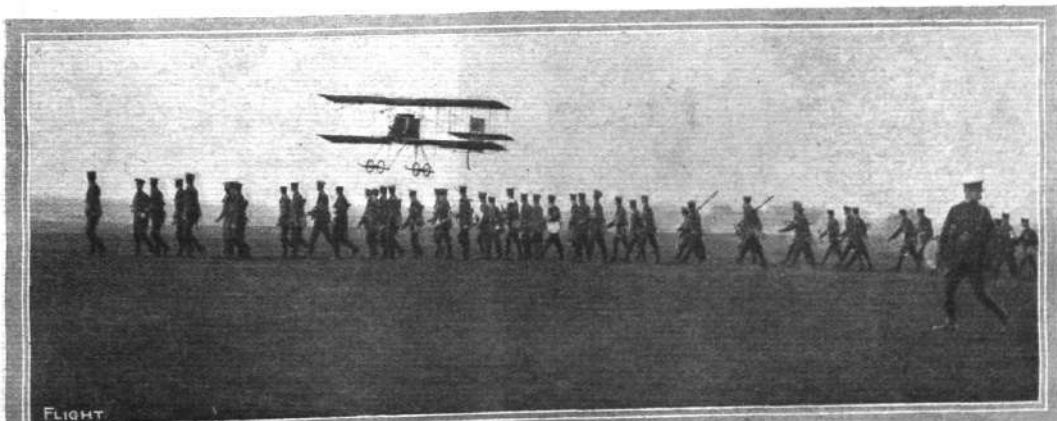
the United Kingdom. At the earliest opportunity Mr. Grahame-White intends making his attempt to win the De Forest prize including the flight over the Channel.



Lieut. Hugh E. Watkins, who is flying his E.N.V.-engined Howard Wright biplane in the Baron de Forest £4,000 Cross-Channel Prize contest.

Pilots' Certificates and Observers.

LAST week in the notes of the London Aerodrome doings it was suggested that Mr. Bouwens was unable to obtain his official



Lieut. Watkins, on his Howard Wright biplane, flying over the troops at Shorncliffe during his trips preparatory to trying for the Baron de Forest £4,000 Cross-Channel Prize.



Mrs. R. Granger Brunt as "Flight" at a skating rink carnival at Bristol recently.

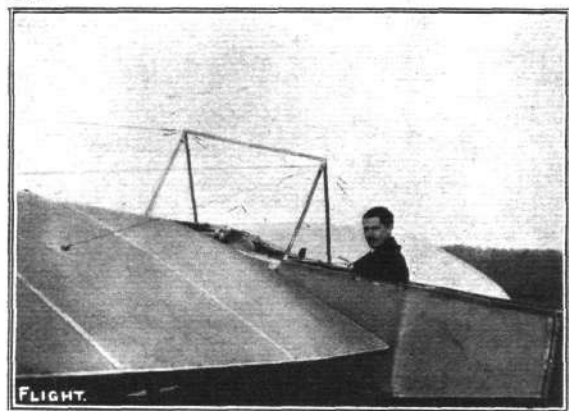
certificate owing to the "belated arrival" of the official observer. We understand that no fault whatever lies with the observer, who was in attendance by about 2 o'clock on the Saturday, notice of the attempt only having reached the Royal Aero Club on the same morning, and that it was in consequence of the thick fog that Mr. Bouwens decided to abandon his tests. In fact, Capt. Board subsequent to this decision successfully went through his flights and qualified for his certificate.

London Chamber of Commerce and Aviation.

OWING to the General Election, the dinner and discussion on "aviation" which had been arranged by the London Chamber of Commerce to take place at the Savoy Hotel on Wednesday last, was postponed, and has now been arranged for January 26th next year.

"Flight" at the Ball.

JUDGING by the number of inquiries received, it appears that aviation will form the theme for quite a large number of fancy dresses at costume balls and skating rink carnivals during this season. In the accompanying photograph is seen Mrs. R. Granger Brunt, wife of an active member of the Bristol Aero Club, in the costume which she designed and wore at a recent skating rink carnival at Bristol. It will be seen that the skirt is decorated with a series of balloons made from old-gold silk covered with white netting, from which hang little golden baskets. Round the bottom of the skirt a number of covers taken from *FLIGHT*, together with various illustrations from the same source, are artistically arranged, and above the cartoon of Captain Dickson will be seen an illustration of the Gnome rotary engine which he uses. The birds are swallows, while the model of a dirigible is made in the same way as the balloons. The model aeroplane which forms the head-dress is an actual model which has accomplished several very satisfactory flights.



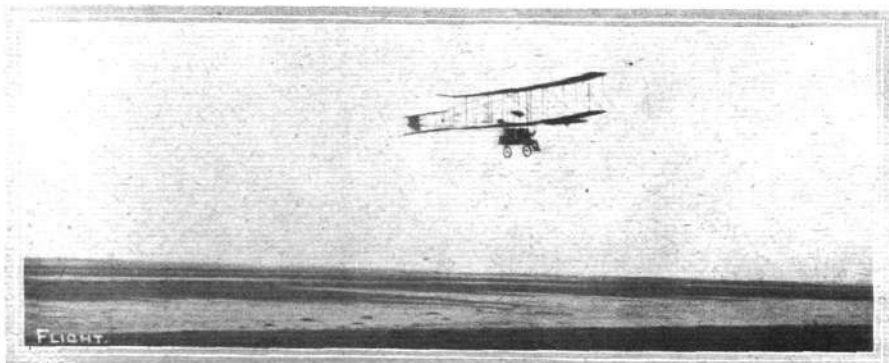
Capt. A. G. Board at the Blériot School at Hendon, where he has just obtained his Royal Aero Club pilot's certificate.

"The Law of the Air."

ON Wednesday evening last, at King's College, London, Mr. H. D. Hazeltine, Reader in English Law at the University of Cambridge, delivered the first of a course of three lectures on "The Law of the Air." The chair was taken by Mr. H. J. Johnson, M.A., President of the Law Society.

Planes, Ltd., Machine.

IN sending us the photograph of the biplane of *Planes, Ltd.*, appearing on this page, Mr. W. P. Thompson, of Liverpool, writes further in regard to the history of this machine and the claim for pendulum stability which the Company put forward as its outstanding feature. Mr. Thompson, after pointing out that by a serious



Last week in the correspondence columns a photograph of the biplane of *Planes, Ltd.*, was published. Above is a photograph of the same machine in flight on Formby Sands. This was secured before a serious smash last week, entirely wrecking the machine, due, we are informed, to the passing over it, when about 70 feet from the ground, of another biplane.

accident to the machine at Freshfield it was completely wrecked, continues as follows:—

"This machine was designed by one of the directors of Planes, Ltd., and was built by Handley Page, Ltd., of London. Just as it was finished, the works blew down, and it had to be rebuilt *ab initio*, hence it was more than a year before it was finished. The machine was then taken to Freshfield. At that time it had two propellers. These not being satisfactory were taken off and a single propeller substituted, the framework being very largely altered for this purpose. The tail was found very much too heavy, and was lightened and made much smaller, and a small lifter in front was also added. Sundry other alterations were made in it by the Company's pilot, Mr. Fenwick. This gentleman, who had never had any experience in flying, flew it successfully the first time, and has flown about 140 miles on it since, obtaining his pilot's certificate on this machine. At the time it was first tried a large number of aeronautical authorities who saw it said it never could possibly fly, as a pendulum action would be set up and the first gust of wind would blow it over. The machine, however, has repeatedly gone out in a stiff wind, when other machines were unable to fly. The single guiding lever acts both for rising and descending, and also for lateral steering. The supposition that a pendulum action would take place has been found utterly

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Mdlle. Dutrieu beats the Woman's Record.

On her Henry Farman biplane on Monday last Mdlle. Dutrieu succeeded in beating the record of 53 minutes recently established by Mdlle. Marvingt. Starting at twenty minutes to four she remained in the air for 1 hr. 9 mins., during which the distance covered was officially recorded as 60.8 kiloms. Mdlle. Dutrieu could have kept up much longer but for the fact that the increasing darkness and the cold made the conditions very trying. She, however, has determined to make another attempt to still further improve the record for the Coupe Femina at the first opportunity.

fallacious in practice, and has proved conclusively the value of Planes, Ltd., patent, which is, *inter alia*, for suspending all the heavy weight below the planes. Mr. Fenwick, for a week or so previous to the destruction of the machine, was engaged in practising flying 20 to 30 miles a day, with a view to taking a flight from London to Paris for the De Forest prize, and it is a very great pity that, owing to this accident, caused by a person who had nothing to do with the machine, he has been unable to make the journey. The little thing between the planes, seen in the enclosed photograph, is for a small petrol supply for the engine in short flights. In longer flights a larger petrol tank in the car is used. During all the trials the 60-h.p. engine made by Messrs. Green worked magnificently, and without a hitch."

Aeroplane Fittings and Accessories.

A NEW edition has just been issued of the very complete list of aero fittings and accessories issued by Messrs. Handley Page, Ltd. It contains full particulars of prices of the H.P. propellers, eyebolts, wire clamps, strainers, stay wire, running wheels, fabrics, aluminium fittings, bamboos, &c., and should prove of great use to those either building or experimenting with flying machines. A copy can be obtained upon request from 72, Victoria Street, by any reader of this journal.

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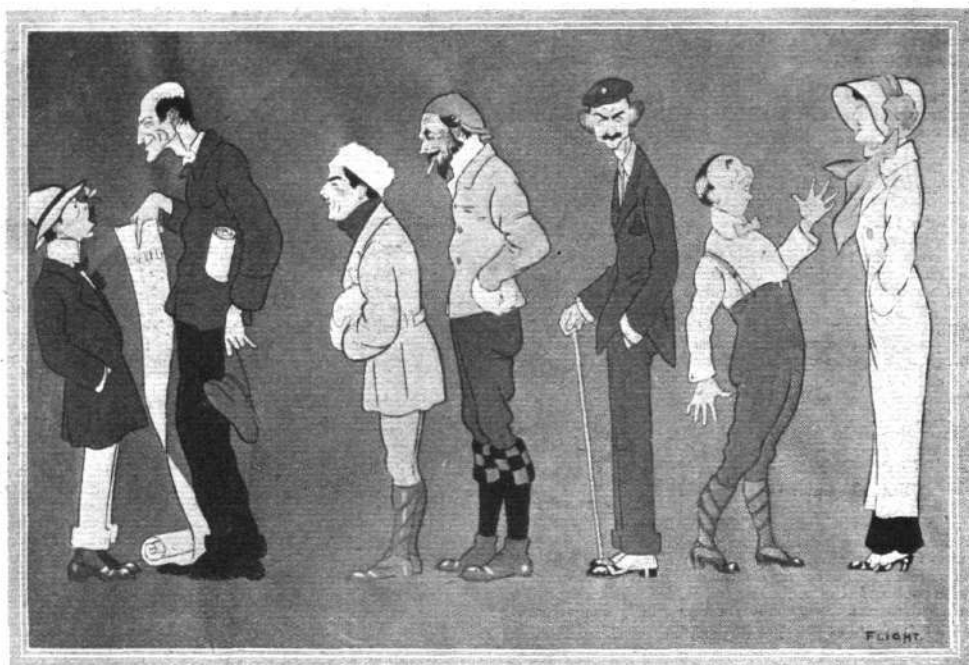
Aviation in India.

THE idiosyncrasies of the native compositor in India are very amusing, and especially so when they relate to technical matters. We feel sure our readers will be interested in the two following illuminating sentences culled from a description in an Indian daily paper of a monoplane now being tried in Madras:—

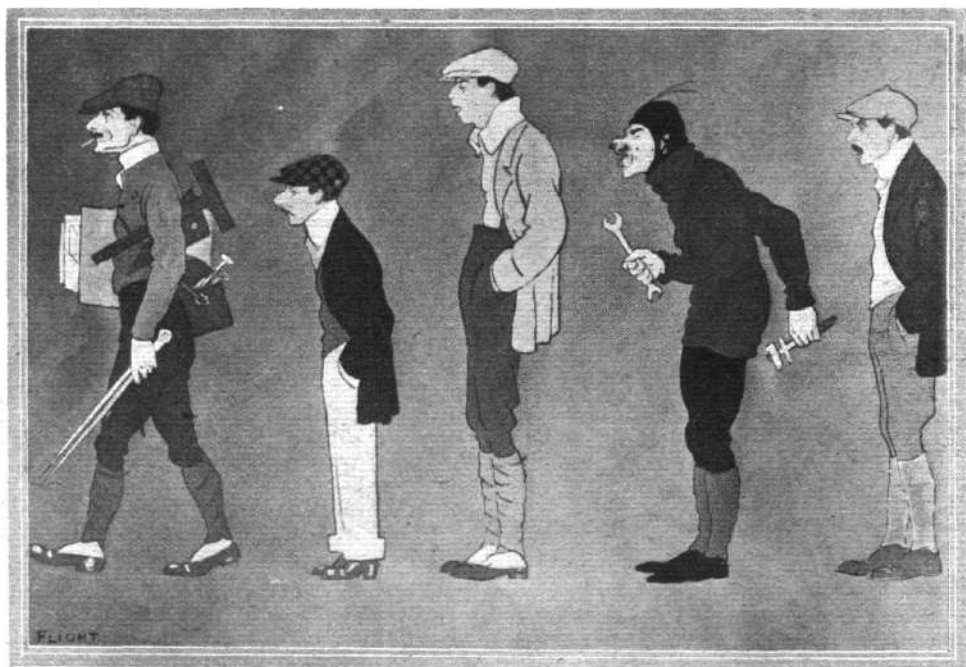
"It has a twenty-horse power engine, secured locally, fitted with Bosch magnetic propellers, and is built of eight pieces of red and white cedar interlaved and covered with cloth. This is done with a view to prevent warping, steering being done by a single wheel."



"CONTINENTAL" CARICATURES AT THE PARIS MOTOR SHOW.—On the Continental Co.'s stand a feature is a remarkable series of caricatures on "Continental" fabric, by Mich, of prominent men in the world of aviation and of motorism. We reproduce those concerning aviation, and those relating to motorism appear in the pages of our contemporary, the "Auto." (Yellow Cover). From left to right: M. Archdeacon presenting Icarus to MM. H. Latham, L. Blériot, &c.



"CONTINENTAL" CARICATURES BY MICH AT THE PARIS SHOW (continued).—From left to right: MM. Santos Dumont, Wilbur Wright, L. Paulhan, Henry Farman, Glenn Curtiss, Rougier, Mdme. de la Roche.



"CONTINENTAL" CARICATURES BY MICH AT THE PARIS SHOW (continued).—From left to right: MM. Gabriel Voisin, Tissandier, Bregi, Olleslaegers, Maurice Farman.



"CONTINENTAL" CARICATURES BY MICH AT THE PARIS SHOW (continued).—From left to right: MM. Comte de la Vaulx, G. Busson, Baron de Caters, Weymann, Lindpaintner.



"CONTINENTAL" CARICATURES BY MICH AT THE PARIS SHOW (continued).—From left to right: MM. Sommer, Leblanc, E. Aubrun, F. de Baeder, Thomas.

FOREIGN AVIATION NEWS.

Paris to Brussels Attempts.

ARRANGEMENTS were made by Tabuteau and Loridan to make a start from Issy on the morning of the 2nd inst. in their attempt to win the A.C.F. Grand Prix. When they arrived at their jumping off point, however, they found a thick fog prevailing and Tabuteau decided to postpone his attempt. Loridan, nevertheless, determined to have a try. When he was concluding a preliminary trial, however, his machine suddenly commenced to drop from a height of about 40 feet. Fortunately Loridan regained control of the machine before it reached the earth and so he and his companion, Fay, escaped injury, but the chassis of the Henry Farman biplane was damaged through the sudden landing in a pool of mud. As soon as repairs have been effected Loridan intends to make another attempt for the prize.

Mr. Henry Farman Flies in the Dark.

HAVING completed the erection of the new machine on which he intends to compete for the Coupe Michelin, and which we illustrate this week, Mr. Henry Farman on Monday, at Etampes, made his first flight with it. By the time everything was ready the aerodrome was enveloped in darkness, but Mr. Farman had lamps placed at the pylones and so he was enabled to cover several rounds of the course.

Across Country in a Breguet.

MOUNTED on a Breguet biplane of the military type, Lieut. Eudmann, on the 29th ult., flew from the Brayelle Aerodrome at Douai to Arras and back, making a detour to Lens on the return journey. The distance of, approximately, 70 kiloms., was covered in about 46 mins.

Leblanc at Pau.

SEVERAL good flights were carried out by Leblanc with the new two-seated Blériot at Pau on the 29th ult. The weather was all that could be desired, and after taking M. René Gasmier for a trip, Leblanc was flying for 50 mins. above Pau with Mdlle. Jane Herveu.

A Banquet for Pilot Aviators.

IN view of the constant increase in the number of aviators who secure their certificates from the Aero Club of France, our French contemporary *L'Auto* has taken the initiative in organising a banquet on December 31st next, at which only certificated pilot aviators will be present. A well-known personality in the aeronautical world will be asked to take the chair, and the order of precedence at the table will be determined by the number of the pilot aviator's certificate. The price of the tickets has been fixed at 20 francs.

The "Daily Mail" 1910 Cross-Country Prize.

AT a banquet given by the Aero Club of France on Wednesday of last week a cheque for £1,000, representing the *Daily Mail* prize for the greatest aggregate cross-country flights in Great Britain and

France during twelve months ending August 15th last, was handed to M. Louis Paulhan by Mr. Ralph Lane, manager of the Paris edition of the *Daily Mail*. The banquet was presided over by M. Leon Barthou, and among those present were Count Lambert, M. Seguin, M. Louis Capazza, M. Tissandier, &c.

Death of M. Jacques Faure.

GREAT regret has been caused in French ballooning circles by the death of M. Jacques Faure, who piloted the "Ile de France" in the last Gordon-Bennett Balloon Race. After that race he paid a visit to Canada and joined in a hunting trip in Northern Quebec, where he contracted fever which was eventually the cause of his death. M. Faure had been connected with various sports in France, principally football, motoring and yachting, but in 1899 he took up ballooning at the suggestion of Count De la Vaulx, and since then he has made some 300 ascents and instructed many pupils in the navigation of balloons. It will be remembered that one of his most notable pupils was Hubert Latham, who made a cross-Channel trip with M. Faure.

The Fifth French Aviatress.

AFTER a long apprenticeship under M. Leblanc, Mdlle. Jane Herveu succeeded on Saturday last in making the necessary tests to secure her Ae.C.F. pilot aviator's certificate. The official observers were MM. Leblanc and Sallenave. There is a probability that Mdlle. Herveu will shortly make an attempt to win the Coupe Femina.

Another Proposed German Circuit.

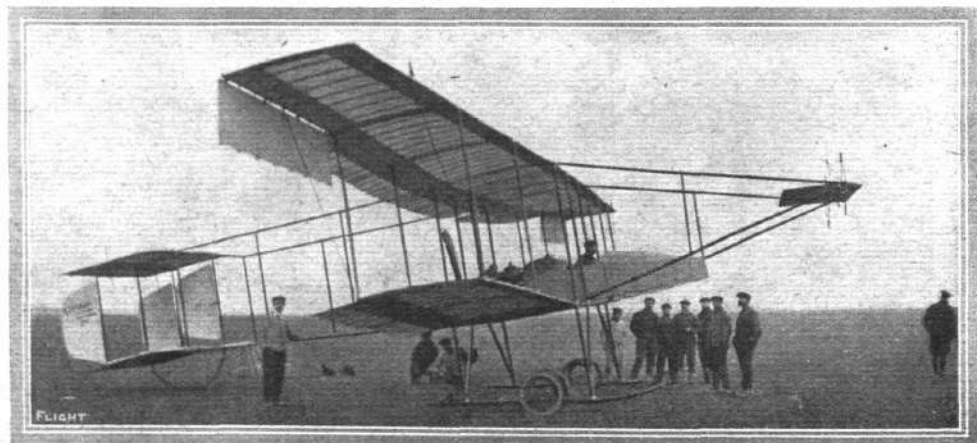
IF all the schemes proposed up to the present come to fruition, there should be quite a glut of national events in Germany next year, especially of the cross-country order. The latest proposal emanates from the South West German Aero Club, and suggests that the points of the circuit should be Friburg, Strasburg, Karlsruhe, Mannheim, Frankfurt, and Wiesbaden. The last flight between Frankfurt and Wiesbaden would be in the nature of a speed test. It is suggested that if the idea can be carried out, the prizes should be distributed at Wiesbaden by the Kaiser. The event would be confined to German aviators, and it is anticipated that some 10 to 15 will take part.

A German Aviatress.

FRAULEIN PAULUS, of Frankfurt, who has already made several daring balloon ascents, has set out to be the first German aviatress, and to this end has placed herself under the charge of Capt. Engelhardt at Johannisthal. She hopes very shortly to be proficient enough to obtain her certificate.

A Long Flight by Amerigo.

IN view of his proposal to make an attempt for the Grand Prize of the Automobile Club of France, from Paris to Brussels and back,



Mr. Henry Farman at the wheel of his special machine referred to by us last week, upon which he will try to beat the record flight for the Michelin Cup before December 31st. It will be noticed that the machine has three rudders.

Amerigo has been training at Mulhouse on a German built Farman biplane. On Sunday he made a flight of 4 hrs. 37 mins., and he only stopped on account of his magneto then giving out, and causing the motor to stop.

Passenger Carrying by Brunnhuber.

SIMON BRUNNHUBER, who has just been appointed instructor at the Military Aviation Ground at Docberitz by the Prussian War Minister, accomplished a notable performance on the 24th ult. Using his German-built Sommer machine, he took up three passengers beside himself, and carried them for 2½ kiloms., landing after a three minutes flight in splendid style.

An Aerial Tour of Belgium.

NOT to be left behind, the Aero Club of Belgium are taking active steps to organise an aerial event round Belgium next year. It is proposed that the tour should start from Brussels on a Sunday during either August or September and continue for fifteen days, there being seven stages, and every alternate day being devoted to an exhibition at various towns. Although these chief points of the tour have not been decided upon it is suggested that the first stage should be from Brussels to Liege.

The Ardennes Aero Club.

CONSEQUENT upon the great interest aroused in the district by the Circuit de l'Est, the Aero Club of the Ardennes has had a very encouraging season, and at the annual general meeting held last week a proposal was brought forward for the establishment of a permanent aerodrome on the moorland of Villers-Semeuse. At the same meeting M. Gobron was elected president, M. Nour, chairman, with MM. Dauxin and Giloteaux as vice-chairmen and M. Lepage as secretary.

Belgian Military Aviators.

THE regulations have just been drawn up under which Belgian military aviators will be granted their pilot certificate. Each candidate will have to twice complete a distance of 5 kiloms. in a closed circuit, and during a third test fly to a minimum height of 50 metres. The course will be marked out by two posts placed 500 metres apart, and it must be covered in the form of a figure eight. At the end of each test the aviator must land within 50 metres of a point previously arranged by him, and the method must be by shutting off the motor.

Olieslaegers Starts a School.

THE very successful Belgian aviator, Olieslaegers, is settling down at the aerodrome of St. Job, close by Antwerp, where he is commencing a school of aviation. His first pupil, Picard, has already made good progress in the mastering of the Blériot monoplane.

A Fatal Accident at Centocelle.

A SERIOUS accident occurred at Centocelle on Saturday last whereby both the Italian pilot named Cammarota and his passenger Castellani lost their lives. It appears that after executing a good flight the machine was gliding down to earth when it suddenly capsized and fell from a height of about 120 ft. The aeroplane in use was a biplane machine in which the pilot had made several alterations to meet his own ideas, and although it is stated that the



M. Laurens and his wife, who, as recorded in FLIGHT last week, put up a new record on his R.E.P. monoplane by flying with his passenger a distance just under 80 kiloms. in the hour.

accident was due to a defect in the motor, it is almost impossible to say whether such was the case, as the machine was completely smashed by the fall.

Italian Military Aviation.

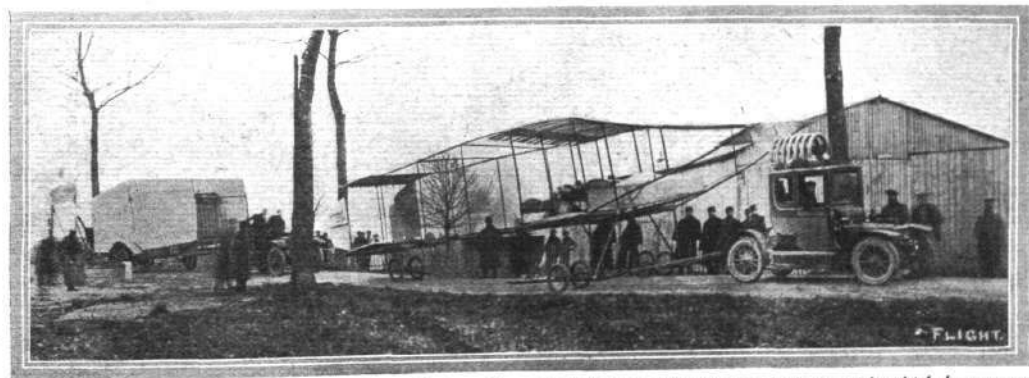
IN view of the rapid progress made by several pupils who have been learning to fly at Salussola, the Italian Minister of War recently instructed Lieut. Savoia to visit the Military Parade Ground there and report upon its suitability as a military aerodrome with a view to its ultimately taking the place of Centocelle.

Wireless Telegraphy on a Blériot.

A SERIES of experiments are being carried out at Satory, by Versailles, by Lieut. Acquaviva with a wireless telegraphy apparatus fitted to his Blériot monoplane. The experiments are being watched personally by General Roques, the head of the Military Aviation Department.

Norwegian Army and Aviation.

WITH a view to their being trained as pilot aviators, in order to take charge of a school which it is proposed to start in connection



Mr. Henry Farman starting from his works at Chalons Camp for Etampes with his new biplane, with which he proposes to compete for the Michelin Cup. This little road journey was referred to last week.

with the Norwegian Army, two young officers, Lieut. Diehi and Lieut. Jacobsen, have been sent to Paris, where they will receive instruction at various schools.

Aviation in Norway.

A MOVEMENT is on foot in Christiania to organise a flying meeting for next year at which the prizes will be over £1,200. The well-known Norwegian cyclist Hansen is about to abandon his old profession for aviation, and will shortly commence his tuition on a Blériot monoplane.

A Swedish Flying School.

AS a result of the flights across the Sound a month or two back, active preparations are now being made to start a flying school at Mamoe, in Sweden. Niroppe has been selected to take charge of this school as chief instructor. It is proposed to organise a grand flying meeting for its inauguration.

Flight in Bulgaria.

AT the invitation of the Bulgarian Minister of War the Russian aviator Maslenikoff paid a visit to Sofia during the last week-end and made three demonstration flights over the Military Parade Ground. In the third he was accompanied by a Bulgarian officer. On Sunday afternoon King Ferdinand and the Princes Boris and Cyril indulged in a spin.

A Farman Biplane at Odessa.

WITH his Henry Farman biplane Zaikine visited Odessa on the 29th ult. and made several flights over the outskirts of the city. In three he was accompanied by passengers. Unfortunately, in the last, when carrying the Russian novelist Kouphine, the machine was suddenly caught by a gust of wind and fell to the ground. Zaikine and his companion, however, escaped with only a few bruises.

Aviation in Russia.

WITH the object of raising funds wherewith to purchase aeroplanes the Russian Aero Club has decided to organise a grand aviation fête at St. Petersburg. With the proceeds it is hoped that three French machines will be procured, one each of the Farman, Blériot, and Antoinette types.

To Found a Russian Aviation School.

WITH the object of founding a school of aviation in Russia, Count Zakaroff, who is now in France and has been much impressed by what he has seen there in connection with aviation, has placed

the sum of 200,000 roubles (£21,000) at the disposition of the Aero Club of Russia.

A Record-Breaking Curtiss Machine.

ACCORDING to a cable from New York, Hamilton, using a new Curtiss biplane, at Memphis, Tenn., last week, succeeded in covering 4 miles in 3 mins. 1 sec., representing a speed of 79½ miles an hour. Up to the present, however, we have received no official confirmation of these figures. Our readers will recollect that the world's speed record for short distances up to this time was Radley's 1 mile in 47½ secs. at Lanark, representing a speed of 75.95 miles an hour.

Drexel's High Flight.

WITH reference to the paragraph which appeared in our last issue regarding Mr. Drexel's high flight at Philadelphia, we are informed by the Continental Tyre Co. that they find the original information supplied to them regarding the fabric used on the aeroplane in question was incorrect. They ask us, therefore, to contradict the statement that the machine was covered with material of their manufacture.

Aviation at Buenos Ayres.

AS a result of the great interest in aviation awakened by the exploits of Cattaneo on his Blériot, an aero club has been started at Buenos Ayres. Several of the members have purchased machines, and short flights are being made almost daily at the Villa Lugano Aerodrome, where there is a Blériot belonging to Mr. Delphyn and a Voisin which used to belong to Bregi and is now owned by Dr. Roth, as well as a couple of Farman machines. Cattaneo has been engaged by Mr. Nicholas Mihanoutch to make a flight between Buenos Ayres and Monte Video.

Flying at Allahabad.

DURING this month, January and February, with ordinary luck, some exhibitions of flight should be witnessed in connection with the Exhibition at Allahabad, the Executive having arranged a programme to that end. Through Mr. Windham, the committee have engaged Mr. Keith-Davis and Mr. Pecquit, who are both using Humber machines. There are also to be a number of competitions and flights for amateurs, but without doubt the bulk of the prize-money will fall to the professional men.

A Monoplane in Madras.

AFTER about four weeks' work Mr. Wilfred Wills completed the construction of his monoplane, on the lines of the cross-Channel Blériot, on the 2nd ult., and took it out for a trial trip on the Island at Madras, and although there was a strong wind blowing he succeeded in making three very short flights. During the last one the machine was somewhat damaged, but the repairs were put in hand at once and two days later a further trial was made with the result that a flight of 30 yards was effected and some other shorter hops.

Flight Education in Germany.

IT is very interesting to note that five universities and six technical schools include the subject of aeronautics in their curriculum for the winter session. The Universities are Berlin, Breslau, Giessen, Göttingen, and Strasburg, while the technical schools are those at Charlottenburg, Brunswick, Dantzig, Stuttgart, Dresden, and Munich. Some of the professors are Prof. Hergesell at Strasburg, Major Parseval at Charlottenburg, Prof. Schütte at Dantzig, and Prof. Prandtl at Göttingen.

AIRSHIP AND BALLOON NEWS.

"Zodiac VIII" in Russia.

THE little Zodiac airship taken by Count de la Vaulx to Russia made two very successful trials on the 21st ult., cruising over the fortress of Brest-Litovsk. It was in charge of Count de la Vaulx, assisted by his two mechanicians, and with the Russian officers, Col. Borekoff and Capt. K. Kraoukliss as passengers.

A Fatal Balloon Trip.

THREE members of the German Balloon Club, who set out in a spherical from Munich on Saturday afternoon, had an unfortunate and exciting experience. They intended to remain aloft for twenty-four hours, but soon after they started they got into a thick fog and lost their bearings. By Sunday morning the balloon had drifted over the North Sea, and began to fall. By discharging their ballast the aeronauts managed to keep the balloon aloft, but during one of these manœuvres one of the passengers, Herr Metzger, was knocked overboard and drowned. On Sunday night land was struck at Berstane, near Kirkwall in the Orkney Islands, and there the two survivors, Herr Distler and Captain Joergans, suffering from cold and hunger, were able to obtain assistance from some cottagers.



Mr. Henry Farman and the stock of fuel for which he has made provision to carry in his long-distance attempt for the Michelin Cup.

CORRESPONDENCE.

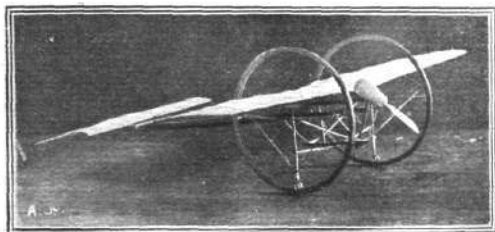
* * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which they have read in FLIGHT, would much facilitate ready reference by quoting the number of each such letter.

NOTE.—Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

THE STURGESS LANDING WHEEL.

[938] I am sending you herewith a photograph of a model aeroplane fitted with safety landing wheels as constructed by me, with some particulars relating to the same. As will be seen, these wheels are of such a size that when fitted to full-sized machines landing may be safely accomplished on almost any kind of ground however rough it may be. The stationary framework of each wheel is mounted on a central cradle, upon which it has a limited castor movement and also a lateral rocking movement controlled by the action of rubber springs or buffers, which take the shock in the event of the machine coming to earth on an even keel. The frame-



work, being stationary, may be cross strutted to any degree of strength to prevent buckling, and the rocking-cradle action, forming a fulcrum below the wheel axis, further prevents the buckling tendency of a large wheel. These wheels are 12 ft. in diameter and run free round the runners of the framework, the lower runners taking the place of the small landing wheels now used. In effect, therefore, the wheels themselves, being so large, constitute a flat track over which the ordinary landing wheels run smoothly. In an involuntary landing at a dangerous angle the large curve of the wheels diverts the path of the aeroplane to a horizontal one on striking the earth, without shock. Every landing is more or less a collision and often an accident, especially to learners, and the adoption of a device of this nature should reduce the risks to a minimum and should therefore conduce to the progress of flight generally. Another point of considerable importance with this apparatus is that it protects the propeller to no small degree whether the aeroplane comes into collision with the earth or an obstacle.

Mablethorpe.

GEO. STURGESS.

BOMB DROPPING.

[939] Can any reader of FLIGHT enlighten me as to whether bomb dropping from an aeroplane is allowable under the terms of the Hague Convention? At the recent "invention" contest held by the Arundel House School Aero Club, of which I am secretary, one of the competitors submitted a device for the dropping of bombs from aerial machines. The judge—who, by the way, is a personal friend of mine—contended that this, being illegal by the Hague Convention, was of no practical utility, while the "inventor" was equally positive that the restrictions of the Hague Convention applied only to balloons, there being no mention of any other kind of aircraft. The matter was left in abeyance, and the numerous people I have asked since have been equally divided on the question. In view of the recent experiments carried on in the States and elsewhere in reference to the dropping of dummy bombs, it would almost seem as though the competitor was right, but we have agreed to submit the case to the arbitration of your paper, in the hope that some competent authority may give us a definite judgment.

Surbiton.

ROBERT P. GRIMMER.

[Substantially the idea of any limitations imposed by the Hague Conference is to prevent combatants from molesting non-combatants in a manner inimical to the present status of civilisation and, consequently, in respect to bomb dropping its object is to prevent places of habitation not participating in the conflict from being

ruthlessly wiped out of existence. The use of bombs by one opposing force on another is, of course, much the same as the use of shells fired from guns, and any practice in the art of bomb dropping naturally relates to this aspect of the case. An exposition on the terms of the Conference, written by Col. Stone, will be found in the "Journal of the Aeronautical Society" of January, 1910, Vol. XIV. —ED.]

IS THE HELICOPTER POSSIBLE?

[940] Although from time to time, both in FLIGHT and the public Press, the question of the helicopter or self-raising machine is discussed or referred to, it is significant that there is no actual example of this type of machine that has ever flown or even risen from the ground by its own power, although we read of "propellers" or "lifters" having been constructed showing a high duty in thrust in lbs. per sq. ft.

From consideration of the matter it seems to me that the true explanation of the failure of the helicopter to materialise is that it is a mechanical impossibility to construct one owing to the mechanical and structural difficulties which arise from the inevitable concentration of weights in a helicopter machine, for the following reasons.

As the helicopter propeller or lifter has to lift the total weight of the whole machine from the ground from a state of rest, it is evident that the "lifter" or "propeller" must be of a sufficient size and strength to move a volume, and therefore weight of air at a sufficient velocity to not only balance the total weight to be lifted, but also provide an excess of power, and therefore weight to cause the translation of the machine after being lifted. And it will be seen that this necessitates the whole load, due to the total weight of the machine, and that excess required for the translation of the machine through the air, being borne at a point over the end of the axle of the propeller or lifter; and the strength of the framework of the machine to take this concentrated load requires a structural weight which at once precludes any chance of its being lifted, as there is no known material which could be used and would give the required strength and necessary lightness, even if no factor of safety were provided for.

Admitting that probably anyone attempting to construct a helicopter would use two or more propellers instead of one, that will not make the case any better but rather worse, for although the total weight to be borne would be divided between the propellers, still the share of the weight of each propeller is still concentrated above it, and it will be found that the combined weights of the structures and each propeller will be actually heavier than if one propeller only were used. Further, in a helicopter, it is necessary that the propellers or lifters are unobstructed both above and below to allow of free entry and egress of air to and from the propeller. This necessitates a cantilever type of construction by which the strains set up in the structure are, of course, enormously increased.

Take the case of a propeller of 25 ft. diameter, and suppose it to be revolved at a sufficient rate to lift 3 tons (that is to say, it would just balance 3 tons, and no extra power is available for progress), one half of its diameter would be 12 ft. 6 ins., and allowing 1 ft. for clearance, the length of the cantilever from its junction with the body of the machine to the centre of the propeller-shaft would be 13 ft. 6 ins., and assuming that the depth of the supporting-arm at its junction with the body of the machine is 2 ft. 6 ins., the strain in the top and bottom members of the arm at this junction will be 16 tons 4 cwt. to tear it away at the bottom and the same to crush the members at the top, from which it will be seen that nothing but an iron plate girder could carry the weight, and this is allowing for no factor of safety. In such a construction a factor of safety of 2 at the lowest would be required; this would at once double the strains the structure is to be capable of bearing, which would then be 32 tons 8 cwt. at bottom and top respectively, and there is still to be added the extra thrust of the propellers required to propel the machine. No wonder the helicopter has never materialised, for it is an impossible machine, in my opinion.

Maidenhead.

CHARLES JAMES REYNOLDS.

SHEDS V. PITS FOR DIRIGIBLES.

[941] As one who for some years past had a great deal of experience in ballooning, and who has given special attention to the question of housing balloons in garages, I should be obliged if you would kindly allow me space in your valuable journal to call attention to a correspondence which I had a year ago with the *Daily Mail* and with the War Office on this important matter.

All experience goes to show that sheds are little or no use to

protect a balloon or airship. The wind even in its milder moods makes little of human strength, as is abundantly proved by the case of the French airship "La Patrie" and of several huge airships of Count Zeppelin, when the united efforts of hundreds of soldiers were utterly powerless to prevent their breaking away.

When M. Clément graciously offered his airship some eighteen months ago to the British Government for military purposes, and when the *Daily Mail* offered £5,000 toward the erection of a shed for the garage of the airship, I immediately wrote to the *Daily Mail* pointing out the uselessness for such a purpose of sheds, however strongly constructed, even when reinforced by heavy steel cables sunk in a cement ground. In the event of even half a gale springing up, how is it possible that a huge airship can be so handled that while the top, the bottom, and the sides of the balloon are wobbling in every direction, it can safely and without risk be steered into the shed?

I suggested to the *Daily Mail*, as well as to the War Office, that instead of erecting sheds, would it not be far better to employ two or three hundred engineering soldiers to excavate pits exactly fitted to the size of the balloon (in war time every 15 or 20 miles).

Into these pits the airship could be guided without the smallest difficulty, or danger of the wind, and once inside the pit, a sliding roof would place the airship in a position of absolute safety, protected alike from the danger of the wind and the danger of projectiles in time of war.

I have no interest whatever in the matter beyond serving of the country which has become my home of adoption: as you will gather by my name, I am a native of Hungary.

Kensington.

PHILIPP HORVATH.

PATENTS.

[942] Every now and then your correspondents are suggesting various improvements and alterations in aeroplanes, &c., and whenever I visit the Patent Office I see a lot of useless ideas being patented.

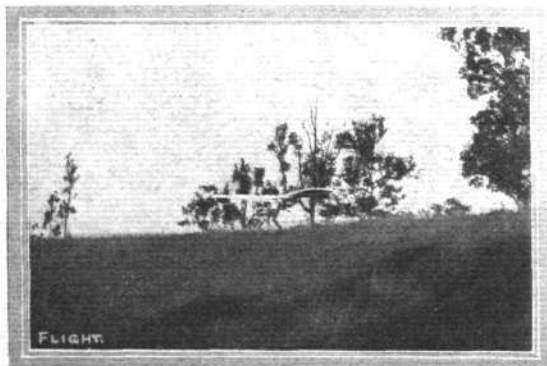
I recently received a souvenir of the Pneumatic Tyre Majority Celebration which was held last year, and was very interested to read the remarks of Mr. A. J. Walter, K.C., on this subject of inventions. He says: "Many and many a time have I been asked what I think of an invention; and the question I always ask is, 'Who is at the back of it?' It is not so much whether the invention is a good one, but whether the people who are going to run it are capable of running it."

That is a point which most inventors seem to ignore, and so waste much time and many pounds protecting their ideas. Mr. Walter goes on to mention that it was the good fortune of Mr. Dunlop to attract early the attention of Mr. Du Cros.

"THE OTHER MAN."

GLIDING IN QUEENSLAND.

[943] Although "gliding" must be rather tame nowadays as far as your paper *FLIGHT* is concerned, I send you a snapshot of the first gliding experiments carried on in Queensland. These



Mr. Thomas Macleod gliding in Brisbane, Queensland.

experiments were made under the supervision of the Aerial League of Australia. As you will see, the machine used was a bat's-wing monoplane glider. The skids can be seen just striking the ground. The wind was blowing 23 m.p.h., with gusts of 28 m.p.h., and the

photo was taken by Mr. J. Lawson-Smith, a member of the council of the League. I am operating the glider, and I carried out experiments that day (October 11th, 1910) all the afternoon. I am a barrister.

Brisbane,
Queensland.

THOMAS MACLEOD, Vice-President,
Aerial League of Australia.

GULLS' TAILS.

[944] Seeing in *FLIGHT* a letter (835) from Mr. Burrell regarding gulls' tails, I beg to forward you the results of my own observations, which differ considerably from his. I am fortunate in being able to watch the action of gulls' tails at closer quarters than the majority of people, viz., from the bridge of a large steamer, at a height of 75 ft. above the water, where the gulls pass so close as to almost touch one with their wings.

I have come to the conclusion that gulls not only expand their tails when alighting, as stated by Mr. Burrell, but also when rising from the water, when turning in the air, and frequently during flight. Their tails are extremely mobile, each corner having a separate vertical movement as well as the horizontal expanding movement, and it appears as if the tail were expanded during flight solely for the purpose of obtaining the greatest possible power in control, for which purpose I believe them to be used to a very great extent, and that during long straight flights the tails were closed in order to reduce resistance.

I intend experimenting in this direction with paper models, and shall be pleased to let you have results.

Liverpool.

S. P. ELLIOTT, Lieut. R.N.R.

[945] With reference to the recent letter from your correspondent, Mr. C. Ian Birrell, who writes that he has constructed a glider with gull's tail and crescent-shaped wings, may I suggest that he try the following glider, which is based on the principles of the Dunne biplane.

Cut a piece of paper to the shape shown in the sketch, bending the wings as indicated by the dotted lines and weighting the tip with sealing-wax. I think Mr. Birrell will be, as I was, both surprised and delighted with the result. I think the accompanying sketch conveys the idea of the necessary camber to anyone who was not fortunate enough to read your article on the construction of the Dunne machine. It must be clearly borne in mind, however, that the camber is confined strictly to the unshaded portion of the sketch. I have made many of these gliders of every conceivable size and I can imagine nothing more perfect than the behaviour of one and all of them as gliders.

Wandsworth Common, S.W.

"GLIDER."

CYCLOPLANES.

[946] I recently read in *FLIGHT* that Mr. Tivertonian and D. Barton (No. 857) were asking for experiences of readers with cycloplanes. Probably the following will interest them:—

Over three years ago I started experiments with models of various kinds. My chief aim was to get a low-powered machine, and not having the means to buy an engine I tried to use a bicycle. The first machine we made far too heavy, and made no attempt to fly it, but with the knowledge gained we started to build No. 2. This was much lighter, but was wrecked by the wind during erection. We decided then to get the thing more compact, and we started on No. 3, with which we had better luck.

When complete we took this machine to the field. It rose quite easily when several men pulled it by ropes. After a long tow my brother offered to get in, but being anxious for his safety we kept close to the planes. The word was given to go, and she rose quite easily to about 6 ft. and travelled about 100 yards. We then realised that, in the excitement of starting, we had only left one man to do the pulling.

We gave up the cycloplane because although we could get clear of the ground we lost our balance. We had not the slightest difficulty in getting the front to lift in all our cycloplanes with about 144 ft. of plane at a speed of about 5 to 6 miles an hour. We have a model now with 20 sq. ft. of sail, weighing 15 lbs., that will travel 150 ft. after a push off by hand. We tried its stability in side and head-winds, and it seemed impossible to turn it over; this model is just the bare main plane, without tail, elevator or balancing devices.

J. W. COLE.

[947] I am much interested in this type of machine and should be obliged if any reader of *FLIGHT* could tell me whether, if a tractor screw were fixed on the leading plane and geared highly from the driving wheel of the bicycle, the machine would prove a success.

Willenhall.

F. LAW.

MODELS.

MINIATURE MODELS.

[948] I have made a model aeroplane, which is the smallest flying model I have seen, and should like to know if any of your readers can compete with it.

Length overall, 8 ins.; main plane, 8 ins. by $1\frac{1}{2}$ in.; elevator, 2 ins. by $\frac{1}{2}$ in.; fitted with three wheels, will rise by its own power in under one yard and fly 100 ft. Weight, about $\frac{1}{16}$ oz.; average cost to make, 1d.

Leeds.

L. BAXTER.

PROPELLER END-THRUST.

[949] Reading in FLIGHT about the loss of power by end-thrust, I take it that end-thrust means that after the propeller has been started it goes "all out" for a time, and then gradually slows down before the elastic is unwound. By fixing a fly-wheel would the loss of end-power be overcome?

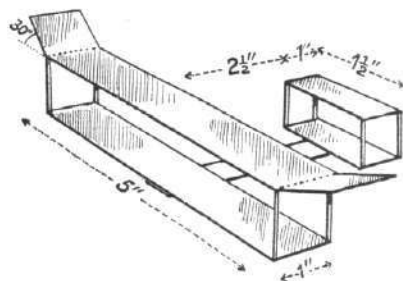
Harlesden.

H. H. WARWICK.

[The most important end-thrust is due to the stretched elastic pulling the propeller-boss hard up against the bearing bracket.—Ed.]

PAPER MODELS.

[950] Having been greatly interested in the flying and making of model paper gliders for the past year I venture to enclose a drawing of one of my own design and construction made out of fairly thin paper. It glides with great steadiness and has a very



gradual slope of fall. I first made it with side curtains, but this was of no use; will you kindly let me know the reason of this? I tried two ailerons on the upper planes but they acted as horizontal rudders; was this because they were fixed too stiffly? I have constructed a paper glider as mentioned in letter 850, but have not had satisfactory results.

Berkhamsted.

C. H. HIGGINS.

[Paper gliders being designed for use in still air scarcely require the same devices that may be necessary on a full size machine for use in the open and the presence of side curtains would add to the resistance without appreciably contributing to the stability. Indeed they might detract from the stability, because in models, which are not under the direct control of the pilot, the maintenance of equilibrium depends upon giving them perfect freedom to adjust their direction of travel, which freedom side curtains tend to restrict.

The term "horizontal rudder" is ambiguous in the above letter,

for it may mean that the effect was to steer the model in a horizontal plane or that the effect was that of an elevator, which is to steer in a vertical plane. If the former effect was noticed the probability is that the extensions of the main plane were not equally rigid and therefore not capable of maintaining their "set" during flight. If, on the other hand, they acted the part of an elevator it suggests that the effect was due to the increment represented by their added surface being applied to the main planes without any appropriate compensation on the tail. By adding an appreciable surface to the main planes the speed for a given loading will be less and that part of the machine will be capable of self support at a lower velocity than hitherto. On the other hand the tail carries the same weight as formerly, consequently if it be made to fly slower it will tend to drop, thereby tilting up the front of the machine and acting the part of an elevator.—Ed.]

TANDEM MONOPLANE.

[951] I am very much obliged to you for your advice on my tandem monoplane.

Since receiving it I have fitted a propeller behind the rear plane, but did not get such good results as with the tractor, so I discarded it and fitted a rear plane with increased camber, and I got a flight of about 30 yds. at the height of 20 ft., but it still drops tail first.

I am making a new model without the front elevators, and am fixing two propellers behind the front plane.

I thank your correspondent, L. P. Elliott (No. 805), for his hint, and will use it if the above model does not turn out satisfactory.

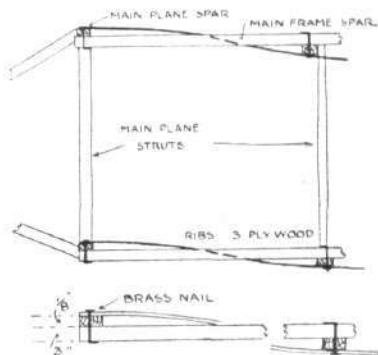
I would like some reader to suggest the best size for the propellers and what elastic I should want; the planes would be 3 ft. by 8 ins., length of fuselage, 30 ins.

Nottingham.

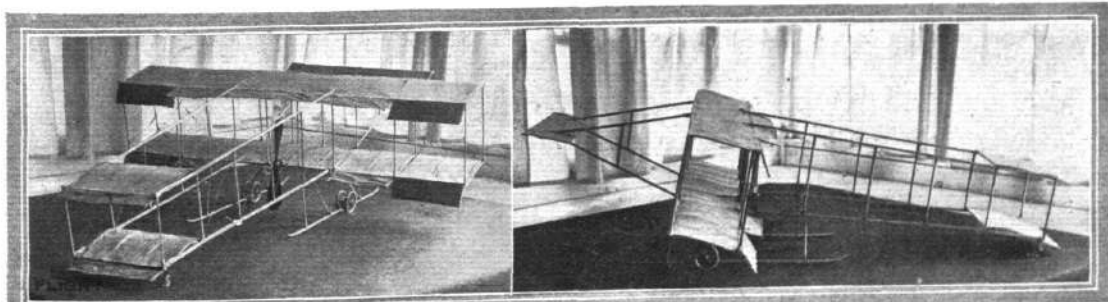
W. L. KELHAM.

MODEL FARMAN.

[952] I have just finished a model aeroplane, which is a scale model Farman, 1 in. to the foot, and I am enclosing some prints,



thinking they might be of some interest to your readers. (It is all built up of $\frac{1}{8}$ in. by $\frac{1}{4}$ in. birch, and the main struts, elevator spars, and skid struts are all shaped down to oval section. The ribs are made of thin three-ply wood, and I find that it takes a very good camber if drawn between the finger and thumb. I notice that some

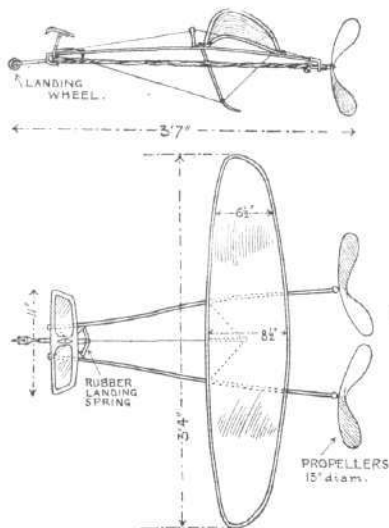


Mr. W. Reid's model biplane.

model makers find difficulty in fixing the main spars to the frame. Mine are done as sketch shows, and it makes a very strong joint.
West Kirby. W. REID.

FLEMING-WILLIAMS MODEL.

[953] Re Mr. Radcliffe's letter, No. 808, asking particulars of the Fleming-Williams model, I send the following details that may be of use. It is a monoplane having a leading plane in front, and is driven by two 13-in. propellers, set slightly at an angle to one another. The main plane is 40 ins. in span, and oval in plan form, the chord in the centre being 8½ ins. The extremities of the wings are curved upwards, but the centre portion of the plane is horizontal. The principle of its lateral stability is much the same as that of the Smith model biplane, which has the lower plane in the form of an inverted arch. A side gust pushes the model bodily sideways, and the upturned wing-tip operates as a steeply inclined



aeroplane to restore lateral equilibrium. The model has an overall length approximately equal to the span. The leading plane in front has a span of 11 ins. The centre of gravity of the model is close up to the leading edge of the main plane, so that the leading plane carries some load. One of the most interesting points about the model is that the extremities of the main planes are more deeply cambered than the centre. The two propellers revolve in opposite directions, and each is driven by 34 strands of 1/16 in. square elastic. The elastic is stretched between the leading plane in front and the outriggers carrying the propellers behind.

Trusting this information may be of use to your correspondent.
London, W. R. W.

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PUBLICATIONS RECEIVED.

Les Oiseaux de Gloire. By P.-N. Chilot. Paris: Welthoff et Roche, 16-18, rue Notre-Dame-des-Victoires.

Mechanical Engineering Abstracts. 15 parts. January to November, 1910 (inclusive). London: International Institute of Technical Bibliography, 157-58, Chancery Lane, W.C.

Famous Aviators: their Records and Performances in the United Kingdom, 1909-10. London: C. C. Wakefield and Co., 27, Cannon Street, E.C.

RECORDS.

Distance and Duration.—Maurice Tabuteau (France), at Etampes, on a Maurice Farman biplane fitted with Renault motor: 465 kiloms. (290 miles) in 6h. 1m. 35s.

Speed.—A. Leblanc (France), on a Blériot monoplane, fitted with Gnome motor, 5 kiloms. in 2 mins. 45½ secs. = 108 m.p.h.

Straight Line (not recognised by F.A.I.).—J. Radley (Great Britain), at Lanark, on a Blériot monoplane with Gnome engine: 1 mile in 47½ secs. = 75.95 m.p.h.

Altitude.—Ralph Johnstone (America), at Belmont Park, N.Y., on a Wright biplane fitted with Wright motor: 9,714 feet.

Aeronautical Patents Published.

Applied for in 1909.

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- 20,854. T. C. MURPHY AND J. M. BETT. Propulsion of aeroplanes.
26,097. W. C. LOVE. Propelling and steering aerial vessels.
26,107. F. HENSEN. Propelling air-ships.
27,082. T. C. MURPHY AND J. M. BETT. Aeroplanes.
30,533. R. BLACKBURN. Landing devices for aerial machines.

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762. T. A. HUGHES. Controlling aeronautical machines.
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